

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference PHNL040057WO	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. PCT/IB2005/050106	International filing date (day/month/year) 10 January 2005 (10.01.2005)	Priority date (day/month/year) 22 January 2004 (22.01.2004)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant KONINKLIJKE PHILIPS ELECTRONICS N.V.			

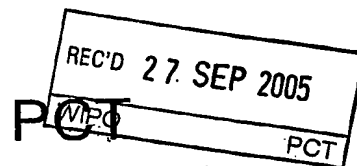
1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 8 sheets, including this cover sheet.  In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 15%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 35%;">Box No. I</td> <td style="width: 50%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 24 July 2006 (24.07.2006)
Facsimile No. +41 22 338 82 70	Authorized officer  <div style="text-align: center; font-weight: bold;">Cecile Chatel</div>

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# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY



To:

see form PCT/ISA/220

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/IB2005/050106

International filing date (day/month/year)  
10.01.2005

Priority date (day/month/year)  
22.01.2004

International Patent Classification (IPC) or both national classification and IPC  
H01L41/09, H01L41/04

Applicant  
KONINKLIJKE PHILIPS ELECTRONICS N.V.

### 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 56.1 bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

### 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/IB2005/050106

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes: Claims	1-9
	No: Claims	
Inventive step (IS)	Yes: Claims	1-9
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-9
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

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**Box No. VIII Certain observations on the international application**

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The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

1. Reference is made to the following document:  
D1: US 5 006 749

2. The document D1 is regarded as being the closest prior art to the subject-matter of claim 1 and shows (the references in parentheses applying to this document):

A method for determining a position of an element (26) which is displaceable relative to a stator (22), the stator (22) comprising several transducers (28, 30, 104), an electrical signal being generated on the transducers (28, 30), so that a wave travelling in the surface of the stator (22) is generated.

The subject-matter of claim 1 differs from this known method in that  
at least part of the wave is reflected to the transducer by the displaceable element, the position of the displaceable element relative to the stator being determined by a processor on the basis of the reflected wave.

The subject-matter of claim 1 is new (Article 33(2) PCT).

With respect to the above distinguishing technical features the problem to be solved by the present invention may be regarded as  
simplifying the determination of the position of a slider relative to a stator.

The solution to this problem proposed in claim 1 (characterising portion) of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

The invention does not use external sensors or other devices to determine the position of a slider within a wave motor. The method of claim 1 uses the transducer means to generate a surface wave for moving the slider. At the same time the transducer means are able to detect part of the surface wave reflected by the slider

and determine the position of the slider by means of a processor. The wave motor configuration and the corresponding method according to the above method steps avoids external sensors for determining the position of the slider. Therefore, the whole assembly becomes less complex and less expensive. None of the available prior art documents discloses or indicates the above distinguishing method steps in order to solve the problem posed. The solution found by the applicant is not obvious or derivable in an obvious manner from the common knowledge of the person skilled in the art. Consequently, the subject-matter of claim 1 is not only novel, but also involves an inventive step.

For the above reasons the clarified subject-matter of claim 6 (which explicitly includes e.g. processing means) is novel and involves an inventive step (see clarity objection in Item VIII below).

3. Claims 2 - 5 and 7 - 9 are dependent on claims 1 and 6 respectively and as such also meet the requirements of the PCT with respect to novelty and inventive step.

**Re Item VIII**

**Certain observations on the international application**

1. The application does not meet the requirements of Article 6 PCT, because claim 6 is not clear / not supported by the description (scope of the claim is too broad) / missing essential features.

1.1 In claim 6 it is not clear if the processing means form part to the claimed subject-matter or not. The technical features following the word "can" do not limit the subject-matter of this claim. Claim 6 defines according to the present wording only a wave motor with slider and transducer as such.

1.2 Broad claim:

According to the present wording any wave motor where some kind of wave is reflected from the displaceable member for determining its position is within the scope of claim 6 (e.g.: a light wave generated by a laser device and directed on a slider used in a wave motor; photo sensing means for receiving the light waves reflected by the slider; determining the position of the slider by processing means coupled to the photo sensing means). It is also to be noted that any prior art wave motor with slider and transducer means **where suitable** electronic means **would in principle allow** the determination of the position of the slider by detecting part of the reflected surface wave would be still within the scope of claim 6 (even if such position detection is not intended). This is due to the fact that the word "can" in claim 6 has no limiting function with respect to the technical features following this term.

1.3 Essential features:

The present invention is, however, directed to

- the generation of a surface wave by transducing means,
- the reflection of at least part of the surface wave by the slider,
- the determination of the slider position by means of the transducer generated surface wave,
- detection of at least part of the reflected surface wave by transducer means and
- determining the slider position by means of a processor.

In claim 6 it should have been made clear that the **processor** forms part of the wave motor and that the **wave is reflected by the displaceable element to the transducer** (see e.g. claim 1). Furthermore, it should have been made clear that **"the wave motor is configured** such that in operation the position ...". The word

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"can" should have been **replaced by the word "is"**.